=> index bioscience medicine

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE, AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS, CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB, DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 12:33:07 ON 21 FEB 2006

=> s (1,3-propanediol# or propanediol#)

3 FILE ADISCTI
14 FILE ADISINSIGHT
173 FILE AGRICOLA
121 FILE ANABSTR
16 FILE ANTE
11 FILE AQUALINE
31 FILE AQUASCI
259 FILE BIOENG
2044 FILE BIOSIS
502 FILE BIOTECHABS
502 FILE BIOTECHDS
628 FILE BIOTECHNO
329 FILE CABA
34058 FILE CAPLUS
252 FILE CEABA-VTB
231 FILE CIN
49 FILE CONFSCI
17 FILE CROPB
29 FILE CROPU
140 FILE DDFB
172 FILE DDFU
848 FILE DGENE
192 FILE DISSABS
140 FILE DRUGB
10 FILE DRUGMONOG2
241 FILE DRUGU
11 FILE EMBAL
2073 FILE EMBASE
503 FILE ESBIOBASE
8 FILE FEDRIP
4 FILE FOREGE
98 FILE FROSTI
181 FILE FSTA
614 FILE GENBANK
4 FILE HEALSAFE
4090 FILE IFIPAT
1 FILE IMSDRUGNEWS
23 FILE IMSRESEARCH
315 FILE JICST-EPLUS
6 FILE KOSMET
496 FILE LIFESCI
1575 FILE MEDLINE
58 FILE NIOSHTIC
75 FILE NTIS
6 FILE OCEAN
3057 FILE PASCAL
75 FILE PCTGEN
29 FILE PHAR
1 FILE PHARMAML
8 FILE PHIN
440 FILE PROMT
68 FILE PROUSDDR
28 FILE PS
123 FILE RDISCLOSURE
2507 FILE SCISEARCH
153 FILE SYNTHLINE
3906 FILE TOXCENTER
28863 FILE USPATFULL
2758 FILE USPAT2
12 FILE VETB
40 FILE VETU

8 FILE WATER
4017 FILE WPIDS
24 FILE WPIFV
4017 FILE WPINDEX
66 FILE IPA
5 FILE NAPRALERT
124 FILE NLDB

L1 QUE (1,3-PROPANEDIOL# OR PROPANEDIOL#)

=> d rank
F1 34058 CAPLUS
F2 28863 USPATFULL
F3 4090 IFIPAT
F4 4017 WPIDS
F5 4017 WPINDEX
F6 3906 TOXCENTER
F7 3057 PASCAL
F8 2758 USPAT2
F9 2507 SCISEARCH
F10 2073 EMBASE
F11 2044 BIOSIS
F12 1575 MEDLINE
F13 848 DGENE
F14 628 BIOTECHNO
F15 614 GENBANK
F16 503 ESBIOBASE
F17 502 BIOTECHABS
F18 502 BIOTECHDS
F19 496 LIFESCI
F20 440 PROMT
F21 329 CABA
F22 315 JICST-EPLUS
F23 259 BIOENG
F24 252 CEABA-VTB
F25 241 DRUGU
F26 231 CIN
F27 192 DISSABS
F28 181 FSTA
F29 173 AGRICOLA

=> file f1-f12, f14, f18, f19, f23

FILE 'CAPLUS' ENTERED AT 12:38:13 ON 21 FEB 2006
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'USPATFULL' ENTERED AT 12:38:13 ON 21 FEB 2006
CA INDEXING COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'IFIPAT' ENTERED AT 12:38:13 ON 21 FEB 2006
COPYRIGHT (C) 2006 IFI CLAIMS(R) Patent Services (IFI)

FILE 'WPIDS' ENTERED AT 12:38:13 ON 21 FEB 2006
COPYRIGHT (C) 2006 THE THOMSON CORPORATION

FILE 'WPINDEX' ACCESS NOT AUTHORIZED

FILE 'TOXCENTER' ENTERED AT 12:38:13 ON 21 FEB 2006
COPYRIGHT (C) 2006 ACS

FILE 'PASCAL' ENTERED AT 12:38:13 ON 21 FEB 2006
COPYRIGHT (C) 2006 INIST-CNRS. All rights reserved.

FILE 'USPAT2' ENTERED AT 12:38:13 ON 21 FEB 2006
CA INDEXING COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'SCISEARCH' ENTERED AT 12:38:13 ON 21 FEB 2006
Copyright (c) 2006 The Thomson Corporation

FILE 'EMBASE' ENTERED AT 12:38:13 ON 21 FEB 2006
Copyright (c) 2006 Elsevier B.V. All rights reserved.

FILE 'BIOSIS' ENTERED AT 12:38:13 ON 21 FEB 2006
Copyright (c) 2006 The Thomson Corporation

FILE 'MEDLINE' ENTERED AT 12:38:13 ON 21 FEB 2006

FILE 'BIOTECHNO' ENTERED AT 12:38:13 ON 21 FEB 2006
COPYRIGHT (C) 2006 Elsevier Science B.V., Amsterdam. All rights reserved.

FILE 'BIOTECHDS' ENTERED AT 12:38:13 ON 21 FEB 2006
COPYRIGHT (C) 2006 THE THOMSON CORPORATION

FILE 'LIFESCI' ENTERED AT 12:38:13 ON 21 FEB 2006
COPYRIGHT (C) 2006 Cambridge Scientific Abstracts (CSA)

FILE 'BIOENG' ENTERED AT 12:38:13 ON 21 FEB 2006
COPYRIGHT (C) 2006 Cambridge Scientific Abstracts (CSA)

=> s L1
  4 FILES SEARCHED...
  9 FILES SEARCHED...
L2 90833 L1

=> s (gene# or sequence# or clone# or recombinant# or polynucleotide#)(s) L2
  4 FILES SEARCHED...
  12 FILES SEARCHED...
L3 1438 (GENE# OR SEQUENCE# OR CLONE# OR RECOMBINANT# OR POLYNUCLEOTIDE#
)(S) L2

=> s biosynthe?(s)L3
L4 78 BIOSYNTHE?(S) L3

=> s glucose(s)L4
L5 21 GLUCOSE(S) L4

=> s (mutant# or mutat? or disrupt? or deleti? or inactivat?)(s)L3
  14 FILES SEARCHED...
L6 270 (MUTANT# OR MUTAT? OR DISRUPT? OR DELETI? OR INACTIVAT?)(S) L3

=> s biosynthe?(s)L6
L7 18 BIOSYNTHE?(S) L6

=> s glucose(s)L7
L8 1 GLUCOSE(S) L7

=> S coli (s)L7
L9 4 COLI (S) L7

=> s organism#(s)L7
L10 1 ORGANISM#(S) L7

=> dup rem L7
PROCESSING COMPLETED FOR L7
L11 12 DUP REM L7 (6 DUPLICATES REMOVED)

=> d ibib abs L11 1-12

L11 ANSWER 1 OF 12 USPATFULL on STN
ACCESSION NUMBER: 2005:105056 USPATFULL
TITLE: Apparatus and methods for simultaneous operation of
    miniaturized reactors
INVENTOR(S): Boccazzi, Paolo, Cambridge, MA, UNITED STATES
    Chen, Angela Y., Cambridge, MA, UNITED STATES
    Jensen, Klavs F., Lexington, MA, UNITED STATES
    Szita, Nicolas, Somerville, MA, UNITED STATES
    Zanzotto, Andrea, Somerville, MA, UNITED STATES
    Zhang, Zhiyu, Dorchester, MA, UNITED STATES

NUMBER KIND DATE

PATENT INFORMATION: US 2005089993 A1 20050428
APPLICATION INFO.: US 2004-816046 A1 20040401 (10)
RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 2003-427373, filed on 1 May 2003, PENDING

NUMBER DATE

PRIORITY INFORMATION: US 2002-376711P 20020501 (60)
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: CHOATE, HALL & STEWART LLP, EXCHANGE PLACE, 53 STATE STREET, BOSTON, MA, 02109, US
NUMBER OF CLAIMS: 117
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 45 Drawing Page(s)
LINE COUNT: 5090
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides a variety of microscale bioreactors (microfermentors) and microscale bioreactor arrays for use in culturing cells. The microfermentors include a vessel for culturing cells and means for providing oxygen to the interior of the vessel at a concentration sufficient to support cell growth, e.g., growth of bacterial cells. Depending on the embodiment, the microfermentor vessel may have various interior volumes less than approximately 1 ml. The microfermentors may include an aeration membrane and optionally a variety of sensing devices. The invention further provides a chamber to contain the microfermentors and microfermentor arrays and to provide environmental control. Certain of the microfermentors include a second chamber that may be used, e.g., to provide oxygen, nutrients, pH control, etc., to the culture vessel and/or to remove metabolites, etc. Various methods of using the microfermentors, e.g., to select optimum cell strains or bioprocess parameters are provided. The invention provides microreactors having a variety of different designs, some of which incorporate active stirring and/or have the capability to operate in batch or fed-batch mode. The invention further provides an apparatus and methods for simultaneous operation of a plurality of microreactors, with monitoring of the individual microreactors during a run. The invention further provides methods of performing gene expression analysis on cells cultured in microreactors.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 2 OF 12 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2005-22343 BIOTECHDS
TITLE: Preparation of micro-organisms for production of 1,2-propanediol for use e.g. in polyesters, involves culture of an initial strain with deletion of certain genes and evolution of genes with better propanediol synthase activity; vector-mediated gene transfer and expression in Escherichia coli and Corynebacterium acetobutylicum
AUTHOR: MEYNIAL S I; GONZALES B; SOUCAILLE P N P
PATENT ASSIGNEE: METABOLIC EXPLORER
PATENT INFO: FR 2864967 15 Jul 2005
APPLICATION INFO: FR 2004-214 12 Jan 2004
PRIORITY INFO: FR 2004-214 12 Jan 2004; FR 2004-214 12 Jan 2004
DOCUMENT TYPE: Patent
LANGUAGE: French
OTHER SOURCE: WPI: 2005-524370 [54]
AN 2005-22343 BIOTECHDS
AB DERWENT ABSTRACT:
NOVELTY - Micro-organisms capable of the production of 1,2- ***propanediol*** from a simple source of carbon (I) are obtained by selective culture of an initial strain in presence of (I), by ***deleting*** the tpiA ***gene*** and the ***gene*** (s) involved in the conversion of methylglyoxal into lactate and causing the evolution of ***genes*** with improved 1,2- ***propanediol*** synthase activity.
DETAILED DESCRIPTION - Method (M1) for the preparation of a strain

of micro-organisms capable of the production of 1,2- ***propanediol*** (PD) by metabolism of a simple source of carbon (I). This involves: (a) the selective culture of an initial strain in a suitable culture medium containing (I) by ***deletion*** of the ***gene*** tpiA and of at least one ***gene*** involved in the conversion of methylglyoxal (propanal) into lactate, in order to bring about the evolution in this initial strain of one or more ***genes*** involved in the ***biosynthetic*** route from DHAP to methylglyoxal and then to PD into ***genes*** with improved PD-synthase activity, followed by; (b) selection and isolation of the improved strain(s). INDEPENDENT CLAIMS are also included for (1) an initial strain as defined above (2) the evolved strain obtained by this method (3) method (M2) for the production of PD by culturing the evolved strain in a suitable medium containing a simple source of carbon, and then isolating the PD obtained.

BIOTECHNOLOGY - Preferred Methods: In M1, the ***gene*** involved in the conversion of methylglyoxal into lactate is selected from gloA, aldA and aldB. The initial strain involves the ***deletion*** of gloA, aldA, aldB and tpiA and also the ***deletion*** of IdhA, pflA, pflB and adhE; the initial strain also includes ***gene*** (s) coding for an enzyme favouring the metabolism of pyruvate to acetate. This enzyme is relatively insensitive to inhibition by NADH and promotes the metabolism of pyruvate via the production of acetyl-CoA and NADH; the enzyme is a pyruvate dehydrogenase complex, preferably an endogenous enzyme. One or more heterologous ***genes*** coding for enzymes involved in the conversion of acetyl-CoA and acetate into acetone are also introduced into the evolved strain, preferably ***genes*** coding for enzymes from C. acetobutylicum. Culturing is then directed towards the evolution of a modified evolved strain containing ***genes*** of this type with an improved acetone synthase ac tivity, followed by the selection and isolation of second-generation micro-organisms with improved PD synthase and improved acetone synthase activity. In M2, both PD and acetone are recovered and one or both is/are purified. Preferred Micro-organisms: Bacteria, yeasts and fungi, especially Escherichia and Corynebacterium species, preferably E. coli and C. glutamicum.

USE - Propane-1,2-diol obtained by this method is used, e.g. for the production of unsaturated polyester resins, liquid detergents, coolants and aircraft de-icing fluids.

ADVANTAGE - A biological method enabling the simultaneous production of 1,2- ***propanediol*** and acetone from a simple source of carbon.

EXAMPLE - Tests were carried out with a modified strain of E. coli capable of producing 1,2- ***propanediol*** (PD) and acetate by fermentation of glucose, i.e. E. coli MG1655DeltatpiA, DeltapflAB, DeltaadhE, DeltaldhA ::kana, DeltagloA, DeltaaldA, DeltaaldB. This was obtained by successive ***inactivation*** of tpiA and other ***genes*** with insertion of a chloramphenicol resistance cassette as described e.g. in Proc. Natl. Acad. Sci. USA 97 : 6640-6645 and with the use of a phage P1 technique. This strain was cultured in a minimum culture medium supplemented with sodium nitrate and yeast extract, operated under a continuous stream of nitrogen and diluted at 0.04 h-1with glucose feed solution (20 g/l). After several weeks, product concentrations increased to give a permanent regime with constant concentrations (acetate and 1,2-propane-diol) and zero residual glucose. If the initial concentration was increased to 40 g/l, the concentrations of biomass and products incre ased after some weeks to stable levels above those obtained with 20 g/l; an increase to 60 g/l resulted in a slight increase in product concentrations, with inhibition of strain growth at an acetate concentration of 15 g/l.(48 pages)

L11 ANSWER 3 OF 12 USPATFULL on STN
ACCESSION NUMBER: 2003:194491 USPATFULL
TITLE: Libraries of expressible gene sequences
INVENTOR(S): Fernandez, Joseph Manuel, Carlsbad, CA, UNITED STATES
Heyman, John Alastair, Cardiff-by-the-Sea, CA, UNITED STATES
Hoeffler, James Paul, Carlsbad, CA, UNITED STATES
PATENT ASSIGNEE(S): INVITROGEN CORPORATION (U.S. corporation)

	NUMBER	KIND	DATE

PATENT INFORMATION: US 2003134302 A1 20030717
APPLICATION INFO.: US 2002-210985 A1 20020801 (10)
RELATED APPLN. INFO.: Continuation of Ser. No. US 2001-3021, filed on 14 Nov 2001, PENDING Continuation of Ser. No. US 1999-285386, filed on 2 Apr 1999, ABANDONED

	NUMBER	DATE
PRIORITY INFORMATION:	US 1998-96981P	19980818 (60)
	US 1998-80626P	19980403 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Lisa A. Haile, J.D., Ph.D., GRAY CARY WARE & FREIDENRICH LLP, Suite 1100, 4365 Executive Drive, San Diego, CA, 92121-2133
NUMBER OF CLAIMS: 40
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 1 Drawing Page(s)
LINE COUNT: 9810
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention described herein comprises libraries of expressible gene sequences. Such gene sequences are contained on plasmid vectors designed to endow the expressed proteins with a number of useful features such as affinity purification tags, epitope tags, and the like. The expression vectors containing such gene sequences can be used to transfect cells for the production of recombinant proteins. A further aspect of the invention comprises methods of identifying binding partners for the products of such expressible gene sequences.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 4 OF 12 USPATFULL on STN
ACCESSION NUMBER: 2003:106252 USPATFULL
TITLE: Libraries of expressible gene sequences
INVENTOR(S): Fernandez, Joseph Manuel, Carlsbad, CA, UNITED STATES
Heyman, John Alastair, Cardiff-by-the-Sea, CA, UNITED STATES
Hoeffler, James Paul, Carlsbad, CA, UNITED STATES
PATENT ASSIGNEE(S): INVITROGEN CORPORATION (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003073163	A1	20030417
APPLICATION INFO.:	US 2001-3021	A1	20011114 (10)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1999-285386, filed on 2 Apr 1999, PENDING

	NUMBER	DATE
PRIORITY INFORMATION:	US 1998-96981P	19980818 (60)
	US 1998-80626P	19980403 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Lisa A. Haile, J.D., Ph.D., GRAY CARY WARE & FREIDENRICH LLP, Suite 1100, 4365 Executive Drive, San Diego, CA, 92121-2133
NUMBER OF CLAIMS: 40
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 1 Drawing Page(s)
LINE COUNT: 9813
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention described herein comprises libraries of expressible gene sequences. Such gene sequences are contained on plasmid vectors designed to endow the expressed proteins with a number of useful features such as affinity purification tags, epitope tags, and the like. The expression vectors containing such gene sequences can be used to transfect cells for the production of recombinant proteins. A further aspect of the invention comprises methods of identifying binding partners for the products of such expressible gene sequences.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN ✓
ACCESSION NUMBER: 2000:824400 CAPLUS
DOCUMENT NUMBER: 134:13981
TITLE: Rapid development of microorganisms with novel phenotypes using cells with mutator genes and selective pressure
INVENTOR(S): Schellenberger, Volker; Liu, Amy D.; Selifonova, Olga V.
PATENT ASSIGNEE(S): Genencor International, Inc., USA
SOURCE: PCT Int. Appl., 47 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000070037	A2	20001123	WO 2000-US13337	20000515
WO 2000070037	A3	20010315		
W: AE, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6365410	B1	20020402	US 1999-314847	19990519
CA 2372556	AA	20001123	CA 2000-2372556	20000515
EP 1183345	A2	20020306	EP 2000-932444	20000515
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002543834	T2	20021224	JP 2000-618443	20000515
US 2002173003	A1	20021121	US 2001-37677	20011023
US 6706503	B2	20040316		
US 2004086972	A1	20040506	US 2003-719571	20031120

PRIORITY APPLN. INFO.: US 1999-314847 A 19990519
WO 2000-US13337 W 20000515
US 2001-37677 A1 20011023

AB The present invention provides methods for directing the evolution of microorganisms comprising the use of mutator genes and growth under conditions of selective pressure. The method discloses mutator genes which can be used in the methods of the present invention and provides ATCC deposits which exemplify the evolved microorganisms produced by the methods. In particular, mutator genes foreign to the host are used, leading to an increase in mutation rate of up to 100,000-fold. The mutator gene is maintained on a curable plasmid, meaning that the process can be stopped when an appropriate phenotype has been obtained. Theis can lead to the accumulation of multiple mutations that together can give rise to a new phenotype. The invention is demonstrated by developing strains of Escherichia coli and E. blattae resistant to 1,3-propanediol.

L11 ANSWER 6 OF 12 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED. on STN DUPLICATE 1
ACCESSION NUMBER: 1999-0088749 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 1999 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): High levels of transcription factor RpoS (.sigma..sup.s) in mviA mutants negatively affect 1,2-propanediol-dependent transcription of the cob/pdu regulon of Salmonella typhimurium LT2
AUTHOR: RONDON M. R.; ESCALANTE-SEMERENA J. C.
CORPORATE SOURCE: Department of Bacteriology, University of Wisconsin-Madison, 1550 Linden Dr., Madison, WI 53706-1567, United States
SOURCE: FEMS microbiology letters, (1998), 169(1), 147-153, 30

refs.
ISSN: 0378-1097 CODEN: FMLED7
DOCUMENT TYPE: Journal; Letter
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Netherlands
LANGUAGE: English
AVAILABILITY: INIST-17567A, 354000072963880210
AN 1999-0088749 PASCAL

AB Expression of the cobalamin ***biosynthetic*** (cob) and 1,2-propanediol utilization (cob/pdu) regulon of Salmonella typhimurium LT2 is controlled at the transcriptional level by global and specific regulatory proteins, In this paper we show that ***mutations*** in the mviA ***gene*** negatively affect cob/pdu transcription in response to 1,2- ***propanediol*** in the environment. The effects of mviA ***mutations*** were consistent with its role in the regulation of RpoS levels in the cell. Null ***mutations*** in rpoS eliminated the negative effect of mviA ***mutations*** on cob/pdu transcription, and restored growth on succinate, propionate and 1,2- ***propanediol*** . In addition, mviA ***mutants*** were deficient in the utilization of succinate, propionate and 1,2- ***propanediol*** as carbon and energy sources.

L11 ANSWER 7 OF 12 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN DUPLICATE
ACCESSION NUMBER: 1997:27311203 BIOTECHNO
TITLE: Purification and characterization of CobT, the nicotinate- mononucleotide: 5,6-dimethylbenzimidazole phosphoribosyltransferase enzyme from Salmonella typhimurium LT2
AUTHOR: Trzebiatowski J.R.; Escalante-Semerena J.C.
CORPORATE SOURCE: J.C. Escalante-Semerena, Dept. of Bacteriology, University of Wisconsin-Madison, 1550 Linden Dr., Madison, WI 53706-1567, United States.
E-mail: jcescala@facstaff.wisc.edu
SOURCE: Journal of Biological Chemistry, (1997), 272/28 (17662-17667), 35 reference(s)
CODEN: JBCHA3 ISSN: 0021-9258
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1997:27311203 BIOTECHNO
AB We report the purification and biochemical characterization of the cobalamin ***biosynthetic*** enzyme nicotinate-mononucleotide:5,6-dimethylbenzimidazole phosphoribosyltransferase (CobT) from Salmonella typhimurium. cobT was overexpressed and the protein purified to approximately 97% homogeneity. NH.sub.2-terminal ***sequence*** analysis confirmed that the protein encoded by cobT was purified. Homogeneous CobT catalyzed the synthesis of N.sup.1-(5-phospho-.alpha.-D-ribosyl)-5,6!-dimethylbenzimidazole. The identity of high performance liquid chromatography-purified product was confirmed by fast atom bombardment mass spectrometry. CobT activity was optimal at 45 .degree.C and pH 10.0. The apparent K(m) for nicotinate mononucleotide was 680 .mu.M; the apparent K(m) for 5,6-dimethylbenzimidazole was less than 10 .mu.M. CobT used nicotinamide mononucleotide as a ribose phosphate donor. CobT phosphoribosylated alternative base substrates including benzimidazole, 4,5- dimethyl-1,2-phenylenediamine, imidazole, histidine, adenine, and guanine in vitro. The resulting ribotides were incorporated into cobamides that were differentially utilized by methionine synthase (EC 2.1.1.13), ethanolamine ammonia-lyase (EC 4.3.1.7), and 1,2- ***propanediol*** dehydratase (EC 4.2.1.28) in vivo. The lack of base substrate specificity by CobT may explain the inability to isolate ***mutants*** blocked in the synthesis of 5,6- dimethylbenzimidazole in this bacterium.

L11 ANSWER 8 OF 12 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN DUPLICATE
ACCESSION NUMBER: 1997:27419033 BIOTECHNO
TITLE: Repression of the cob operon of Salmonella typhimurium

by adenosylcobalamin is influenced by mutations in the pdu operon
AUTHOR: Ailion M.; Roth J.R.
CORPORATE SOURCE: J.R. Roth, Department of Biology, Universtry of Utah, Salt Lake City, UT 84112, United States.
SOURCE: Journal of Bacteriology, (1997), 179/19 (6084-6091), 40 reference(s)
CODEN: JOBAAY ISSN: 0021-9193
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1997:27419033 BIOTECHNO
AB The cob operon encodes functions needed for the ***biosynthesis*** of adenosylcobalamin (Ado-B.sub.1.sub.2). ***Propanediol*** induces transcription of the cob operon and the neighboring pdu operon, which encodes proteins for the B.sub.1.sub.2- dependent degradation of ***propanediol*** . Expression of the cob (but not the pdu) operon is repressed by exogenous cyanocobalamin. Evidence is provided that cob operon repression is signaled by internally generated Ado-B.sub.1.sub.2, which can be formed either by the CobA adenosyltransferase or by an alternative adenosyltransferase (AdoT) that we infer is encoded within the pdu operon. Repression is also affected by ***mutations*** (AdoB) in the pdu operon that map upstream of the inferred pdu adenosyltransferase ***gene*** . Such ***mutations*** allow cobalamin to mediate repression at concentrations 100-fold lower than those needed in the wild type. It is proposed that these ***mutations*** eliminate a component of the ***propanediol*** dehydratase enzyme complex (PduCDE) and that this complex competes with the cob regulatory mechanism for a limited supply of Ado-B.sub.1.sub.2.

L11 ANSWER 9 OF 12 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
DUPLICATE
ACCESSION NUMBER: 1994:24273538 BIOTECHNO
TITLE: The control region of the pdu/cob regulon in Salmonella typhimurium
AUTHOR: Chen P.; Andersson D.I.; Roth J.R.
CORPORATE SOURCE: Department of Biology, University of Utah,Salt Lake City, UT 84112, United States.
SOURCE: Journal of Bacteriology, (1994), 176/17 (5474-5482)
CODEN: JOBAAY ISSN: 0021-9193
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1994:24273538 BIOTECHNO
AB The pdu operon encodes proteins for the catabolism of 1,2- ***propanediol*** ; the nearly cob operon encodes enzymes for the ***biosynthesis*** of adenosyl-cobalamin (vitamin B.sub.1.sub.2), a cofactor required for the use of ***propanediol*** . These operons are transcribed divergently from distinct promoters separated by several kilobases. The regulation of the two operons is tightly integrated in that both require the positive activator protein PocR and both are subject to global control by the Crp and ArcA proteins. We have determined the DNA nucleotide ***sequences*** of the promoter-proximal portion of the pdu operon and the region between the pdu and cob operons. Four open reading frames have been identified, pduB, pduA, pduF, and pocR. The pduA and pduB ***genes*** are the first two ***genes*** of the pdu operon (transcribed clockwise). The pduA ***gene*** encodes a hydrophobic protein with 56% amino acid identity to a 10.9-kDa protein which serves as a component of the carboxysomes of several photosynthetic bacteria. The pduF ***gene*** encodes a hydrophobic protein with a strong similarity to the GlpF protein of Escherichia coli, which facilitates the diffusion of glycerol. The N-terminal end of the PduF protein includes a motif for a membrane lipoprotein-lipid attachment site as well as a motif characteristic of the MIP (major intrinsic protein) family of transmembrane channel proteins. We presume that the PduF protein facilitates the diffusion of ***propanediol*** . The pocR ***gene*** encodes the positive regulatory protein of the cob and pdu operons and shares the

helix-turn-helix DNA binding motif of the AraC family of regulatory proteins. The ***mutations*** cobR4 and cobR58 cause constitutive, pocR-independent expression of the cob operon under both aerobic and anaerobic conditions. Evidence that each ***mutation*** is a ***deletion*** creating a new promoter near the normal promoter site of the cob operon is presented.

L11 ANSWER 10 OF 12 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
DUPLICATE
ACCESSION NUMBER: 1993:23339296 BIOTECHNO
TITLE: Two global regulatory systems (Crp and Arc) control the cobalamin/propanediol regulon of Salmonella typhimurium
AUTHOR: Ailion M.; Bobik T.A.; Roth J.R.
CORPORATE SOURCE: Biology Department, University of Utah,Salt Lake City, UT 84112, United States.
SOURCE: Journal of Bacteriology, (1993), 175/22 (7200-7208)
CODEN: JOBAAY ISSN: 0021-9193
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1993:23339296 BIOTECHNO
AB The ***genes*** for cobalamin (vitamin B.sub.1.sub.2) ***biosynthesis*** (cob) are coregulated with ***genes*** for degradation of ***propanediol*** (pdu). Both the cob and pdu operons are induced by ***propanediol*** by means of a positive regulatory protein, PocR. This coregulation of a synthetic and a degradative pathway reflects the fact that vitamin B.sub.1.sub.2 is a required cofactor for the first enzyme in ***propanediol*** breakdown. The cob/pdu regulon is induced by ***propanediol*** under two sets of growth conditions, i.e., during aerobic respiration of a poor carbon source and during anaerobic growth. We provide evidence that, under aerobic conditions, the Crp/cyclic AMP system is needed for all induction of the pocR, cob, and pdu ***genes*** . Anaerobically, the Crp/cyclic AMP and ArcA/ArcB systems act additively to support induction of the same three transcription units. The fact that these global control systems affect expression of the ***gene*** for the positive regulatory protein (pocR) as well as the pdu and cob operons is consistent with our previous suggestion that these two global controls may act directly only on the pocR ***gene*** ; their control over the cob and pdu operons may be an indirect consequence of their effect on the level of PocR activator protein. The reported experiments were made possible by the observation that pyruvate supports aerobic growth of all of the ***mutants*** tested (cya, crp, arcA, and arcB); pyruvate also supports anaerobic growth of these ***mutants*** if the alternative electron acceptor, fumarate, is provided. By using pyruvate as a carbon source, it was possible to grow all of these ***mutant*** strains under identical conditions and compare their expression of the cob/pdu regulon. The role of Crp in control of vitamin B.sub.1.sub.2 synthesis suggests that the major role of vitamin B.sub.1.sub.2 in Salmonella spp. is in catabolism of carbon sources; the coregulation of the cob and pdu operons suggests that ***propanediol*** is the major vitamin B.sub.1.sub.2-dependent carbon source.

L11 ANSWER 11 OF 12 LIFESCI COPYRIGHT 2006 CSA on STN
ACCESSION NUMBER: 92:8417 LIFESCI
TITLE: The poc locus is required for 1,2-propanediol-dependent transcription of the cobalamin biosynthetic (cob) and propanediol utilization (pdu) genes of Salmonella typhimurium .
AUTHOR: Rondon, M.R.; Escalante-Semerena, J.C.
CORPORATE SOURCE: Dep. Bacteriol., Univ. Wisconsin, 1550 Linden Dr., Madison, WI 53706, USA
SOURCE: J. BACTERIOL., (1992) vol. 174, no. 7, pp. 2267-2272.
DOCUMENT TYPE: Journal
FILE SEGMENT: J; N; G
LANGUAGE: English
SUMMARY LANGUAGE: English
AB In this communication we present evidence that indicates that 1,2-

propanediol (1,2-PDL) is a positive effector of the transcription of the cobalamin (vitamin B sub(12)) ***biosynthetic*** (cob) operon and of the 1,2-PDL utilization (pdu) ***genes*** . The stimulatory effects of 1,2-PDL were demonstrated using Mu d-lac transcriptional fusions to cob and pdu. Significantly increased levels of transcription of the cob and pdu operon fusions were measured in cultures grown under both anoxic and highly aerated conditions when 1,2-PDL was present in the culture medium. We have isolated ***mutants*** that carry lesions that render both pdu and cob transcription unresponsive to 1,2-PDL. These ***mutations*** were mapped to the region between cob and pdu (41 min), and they define the poc locus PDL and cobalamin). The poc locus is required for the positive regulatory effects of 1,2-PDL to be exerted.

L11 ANSWER 12 OF 12 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
ACCESSION NUMBER: 1990:20165332 BIOTECHNO
TITLE: Cobalamin-dependent 1,2-propanediol utilization by Salmonella typhimurium
AUTHOR: Jeter R.M.
CORPORATE SOURCE: Department of Biological Sciences, Texas Tech University, Lubbock, TX 79409-3131, United States.
SOURCE: Journal of General Microbiology, (1990), 136/5 (887-896)
CODEN: JGMIAN ISSN: 0022-1287
DOCUMENT TYPE: Journal; Article
COUNTRY: United Kingdom
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1990:20165332 BIOTECHNO
AB The enteric bacterium Salmonella typhimurium utilizes 1,2-***propanediol*** as a sole carbon and energy source during aerobic growth, but only when the cells are also provided with cobalamin as a nutritional supplement. This metabolism is mediated by the cobalamin-dependent ***propanediol*** dehydratase enzyme pathway. Thirty-three insertion ***mutants*** were isolated that lacked the ability to utilize ***propanediol*** , but retained the ability to degrade propionate. This phenotype is consistent with specific blocks in one or more steps of the ***propanediol*** dehydratase pathway. Enzyme assays confirmed that ***propanediol*** dehydratase activity was absent in some of the ***mutants*** . Thus, the affected ***genes*** were designated pdu (for defects in ***propanediol*** utilization). Seventeen ***mutants*** carried pdu::lac operon fusions, and these fusions were induced by ***propanediol*** in the culture medium. All of the pdu ***mutations*** were located in a single region (41 map units) on the S. typhimurium chromosome between the his (histidine ***biosynthesis***) and branch I cob (cobalamin ***biosynthesis***) operons. They were shown to be P22-cotransducible with a branch I cob marker at a mean frequency of 12%. ***Mutants*** that carried ***deletions*** of the genetic material between his and cob also failed to utilize ***propanediol*** as a sole carbon source. Based upon the formation of duplications and ***deletions*** between different pairs of his::MudA and pdu::MudA insertions, the pdu ***genes*** were transcribed in a clockwise direction relative to the S. typhimurium genetic map.

=> d his

L1 QUE (1,3-PROPANEDIOL# OR PROPANEDIOL#)

FILE 'CAPLUS, USPATFULL, IFIPAT, WPIDS, TOXCENTER, PASCAL, USPAT2, SCISEARCH, EMBASE, BIOSIS, MEDLINE, BIOTECHNO, BIOTECHDS, LIFESCI, BIOENG' ENTERED AT 12:38:13 ON 21 FEB 2006
L2 90833 S L1
L3 1438 S (GENE# OR SEQUENCE# OR CLONE# OR RECOMBINANT# OR POLYNUCLEOTI
L4 78 S BIOSYNTHE?(S)L3
L5 21 S GLUCOSE(S)L4
L6 270 S (MUTANT# OR MUTAT? OR DISRUPT? OR DELETI? OR INACTIVAT?)(S)L2
L7 18 S BIOSYNTHE?(S)L6
L8 1 S GLUCOSE(S)L7

L9 4 S COLI (S)L7
L10 1 S ORGANISM#(S)L7
L11 12 DUP REM L7 (6 DUPLICATES REMOVED)

=> log y